

We Claim:

- 1 1. An apparatus comprising:
2 a first substrate having a first surface and a second surface;
3 a second substrate, having a third surface and a fourth surface, coupled to said first
4 substrate;
5 an electrical connection coupling said first surface of said first substrate to said
6 third surface of said second substrate; and
7 a flow modifier on said first surface of said first substrate extending to at least a
8 height even with said third surface of said second substrate.
- 1 2. The apparatus of claim 1 further comprising a molding compound between said
2 first substrate and said second substrate.
- 1 3. The apparatus of claim 1 further comprising a molding compound on said fourth
2 surface of said second substrate.
- 1 4. The apparatus of claim 1 wherein said second substrate is a flip chip.
- 1 5. The apparatus of claim 1 wherein said flow modifier is solder resist mask.
- 1 6. The apparatus of claim 1 wherein said electrical connection is a solder bump.
- 1 7. The apparatus of claim 6 wherein said solder bump comprises lead and tin.

1 8. The apparatus of claim 6 wherein a height of said solder bump is approximately in
2 a range of 25 microns to 100 microns.

1 9. The apparatus of claim 1 wherein said flow modifier extends to a height
2 approximately in a range of 75 microns to 400 microns.

1 10. The apparatus of claim 1 further comprising a third substrate coupled to said first
2 substrate.

1 11. The apparatus of claim 10 wherein said flow modifier on said first substrate
2 extends between said second substrate and said third substrate.

1 12. A method comprising:

2 providing a first substrate;

3 predetermining a device placement location for a second substrate to be coupled to
4 said first substrate;

5 predetermining a flow modifier height at least equal to a distance from a bottom
6 surface of a second substrate used to couple said second substrate to said first substrate, to
7 a top surface of said first substrate that is coupled to said second substrate;

8 coupling a flow modifier to said first substrate substantially around said device
9 placement location and extending to a height substantially equal to said predetermined
10 flow modifier height;

11 coupling said second substrate to said first substrate at said device placement
12 location;

13 applying a first molding compound over said second substrate; and

14 applying a second molding compound between said first substrate and said second
15 substrate.

1 13. The method of claim 12 wherein said flow modifier height is a distance
2 approximately between 75 microns and 400 microns.

1 14. The method of claim 12 further comprising applying a low pressure over said
2 substrates.

1 15. The method of claim 12 wherein said applying the first molding compound over
2 said second substrate and applying said second molding compound between said first
3 substrate and said second substrate happen at substantially the same time.

1 16. The method of claim 12 wherein applying said first molding compound over said
2 second substrate happens before applying said second molding compound between said
3 first substrate and said second substrate.

1 17. The method of claim 12 wherein applying said first molding compound over said
2 second substrate happens after applying said second molding compound between said
3 first substrate and said second substrate

1 18. The method of claim 12 wherein the second substrate has not been coupled to said
2 first substrate before said flow modifier is deposited.

1 19. The method of claim 12 wherein said flow modifier is placed substantially around
2 said device placement locations.

1 20. A system comprising:
2 a molded matrix array package;
3 a first substrate coupled to said molded matrix array package;
4 a second substrate coupled to said first substrate; and
5 a flow modifier coupled to said first substrate extending to a height at least equal
6 to a distance from a bottom surface of said second substrate used to couple said second
7 substrate to said first substrate, to a top surface of said first substrate that is coupled to
8 said second substrate.

1 21. The system of claim 20 further comprising a molding compound between said
2 first substrate and said bottom surface of said second substrate.

1 22. The system of claim 20 further comprising a molding compound on said top
2 surface of said second substrate.

1 23. The system of claim 20 wherein said second substrate is a flip chip.

1 24. The system of claim 20 wherein said height of said flow modifier is
2 approximately between 75 microns and 400 microns.

1 25. The system of claim 20 further comprising a third substrate coupled to said first
2 substrate.

1 26. The system of claim 25 wherein said flow modifier coupled to said first substrate
2 covers a surface of said first substrate between said second substrate and said third
3 substrate.

1 27. A machine-readable medium that provides instructions, which when executed by a
2 machine, cause said machine to perform operations comprising:

3 providing a first substrate;

4 predetermining a device placement location for a second substrate to be coupled to
5 said first substrate;

6 predetermining a flow modifier height at least equal to a distance from a bottom
7 surface of a second substrate used to couple said second substrate to said first substrate, to
8 a top surface of said first substrate that is coupled to said second substrate;

9 coupling a flow modifier to said first substrate substantially around said device
10 placement location and extending to a height substantially equal to said predetermined
11 flow modifier height;

12 coupling said second substrate to said first substrate at said device placement
13 location;

14 applying a first molding compound over said second substrate; and

15 applying a second molding compound between said first substrate and said second
16 substrate.

1 28. The machine readable medium of claim 27 wherein said applying the first
2 molding compound over said second substrate and applying the second molding
3 compound between said first and second substrate happen at substantially the same time.

1 29. The machine readable medium of claim 27 wherein said second substrate may be
2 coupled to said first substrate before said flow modifier is coupled to said first substrate.